

REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicants thank the Examiner for carefully considering this application.

Disposition of Claims

Claims 1-56 were pending in this application. Claims 6-8, 12, 14-16, 18, 20-23, 27, 29, 34-35, 39, 41-44, 46, 48-51, and 55 have been canceled without prejudice or disclaimer. Claims 57 and 58 have been added and are pending. Accordingly, claims 1-6, 9-11, 13, 17, 19, 24-26, 28, 30-33, 36-38, 40, 45, 47, 52-54, and 56-58 remain pending. Claims 1 and 30-32 are independent. The remaining claims depend, directly or indirectly, from claims 1 and 32.

Claim Amendments

Claims 6-8, 12, 14-16, 18, 20-23, 27, 29, 34-35, 39, 41-44, 46, 48-51, and 55 have been canceled without prejudice or disclaimer. Independent claims 1-2 and 30-32, in addition to dependent claim 11, have been amended to clarify the invention. Support for these amendments may be found, for example, on pages 14-19 and Figures 2-5 of the originally-filed application. The remaining amended claims have been to address antecedent basis issues arising from the amendments to claims 1, 11, and 32. Claims 57 and 58 have been added and are pending. Applicants respectfully assert that no new matter has been introduced by way of the new claims, as support may be found, for example, on pages 34-35 and Figure 10 of the originally-filed application. Accordingly, Applicants submit that because these amendments are fully supported by the originally-filed application, they do not necessitate a new search.

Rejections under Double Patenting

Claims 1, 3, 4, 12, 15, 29-34, and 43 stand provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1, 3, 4, 14, 15, 30, 38, 46, and 47 of co-pending Application No. 10/698,168 (Copending) in view of U.S. Publication No. 2003/0204634 (Pinkerton).

Claims 12, 15, 29, 34, and 43 have been cancelled by this reply. Accordingly, this rejection is now moot. With respect to the remaining claims, Applicants respectfully submit that should this provisional obviousness-type double patenting rejection be the only remaining grounds of rejection in the application, this provisional rejection will be addressed in a timely manner as is discussed in MPEP § 804.

Rejections under 35 U.S.C. § 112

Claim 29 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. As claim 29 has been canceled in this reply, this rejection is now moot and withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C. § 103

MPEP §2143 states that “[t]he key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious.” The

Supreme Court in *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1739, 75 U.S.L.W. 4289 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. *See*, MPEP §2143.

In particular, the Examiner “must articulate the following: (1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference; ...” MPEP § 2143(A). Applicants assert that the prior art, whether viewed separately or in combination, fails to teach or suggest all the limitations of the pending independent claims.

Claims 1-24, 27-52, and 55-56

Claims 1-24, 27-52, and 55-56 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,697,868 (Craft) in view of Pinkerton. Claims 6-8, 12, 14-16, 18, 20-23, 27, 29, 34-35, 39, 41-44, 46, 48-51, and 55 have been canceled. Accordingly, this rejection is now moot with respect to the canceled claims. To the extent that this rejection applies to the amended claims, the rejection is respectfully traversed.

Amended independent claim 1 is directed to a method of processing a network connection in a computer system. In particular, amended claim 1 recites, in part: (i) establishing the network connection by a software network protocol stack implemented in the kernel of an operating system associated with the computer system, wherein the kernel maintains kernel-level connection state information for the network connection, and wherein the socket layer maintains socket layer-level connection state information for the network connection; (ii) determining whether to offload the

network connection from the software network protocol stack to a hardware network protocol stack implemented in a TCP Offload Engine (TOE)-capable network interface card associated with the computer system; (iii) transferring the network connection from the software network protocol stack to the hardware network protocol stack using a network interface card driver when it is determined to offload the network connection from the software network protocol stack to the hardware network protocol stack; and (iv) determining to accept the transfer of the network connection at the hardware network protocol stack based on a processing capability of the hardware network protocol stack, wherein the network interface card maintains hardware-level connection state information for the network connection, and wherein after the hardware network protocol stack accepts transfer of the network connection the software network protocol stack is configured to continually reference hardware-level connection state information and the hardware network protocol stack is configured to continually reference kernel-level connection state information and socket layer-level connection state information.

Craft does not teach or suggest at least elements (i)-(iv) of amended claim 1 recited above. In particular, Craft teaches the transfer of a connection context “comprising of variables used to represent the state of a given TCP connection” between a host computer and a network interface card (NIC), wherein the transfer “may occur several times during the course of a TCP connection” through the use of the “connection handout” and “connection flush” offload commands. See *Craft*, column 5 lines 56-67. As such, the variables representative of connection state are transmitted back to the host periodically by virtue of issued offload commands. Because Craft merely provides for periodic transfer of connection state information from a NIC back to a host, it clearly does not teach or suggest a mechanism that enables a software network protocol stack to continually reference

hardware-level connection state information. Accordingly, Craft fails to teach or suggest all the limitations of independent claim 1.

Moreover, Pinkerton does not teach or suggest that which Craft lacks. Specifically, Pinkerton teaches categorizing connection state information into CONST, CACHED, and DELEGATED variables. *See* Pinkerton [0040]. While the host processing unit maintains ownership of the CONST variables and accordingly sends updates a the peripheral device to which a network connection has been offloaded to, *See* Pinkerton [0040], ownership of DELEGATED variables is transferred by the host processing unit to the peripheral device during the network connection offload. Further, “the DELEGATED variables are written once when the offload occurs and are read back when the offload is terminated.” *See* Pinkerton [0040]. As is evident from the treatment of connection state variables under Pinkerton, the peripheral device holding the offloaded network connection and the host maintain distinct copies of the connection state information. As such, Pinkerton does not contemplate any mechanism that would enable a software network protocol stack in the host processing unit to continually reference hardware-level connection state information maintained in the peripheral device. At best, Pinkerton is limited to periodic updating. *See* Pinkerton [0040].

In view of the above, amended independent claim 1 is patentable over Craft and Pinkerton. Further, claims 30, 31, and 32 include at least the same patentable limitations as independent claim 1; accordingly, these claims are patentable over Craft and Pinkerton for at least the same reasons as discussed above with respect to independent claim 1. Dependent claims are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 25-26, and 53-54

Claims 25-26 and 53-54 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Craft in view of Pinkerton in further view of U.S. Patent No. 6,622,172 (Tam). To the extent that this rejection applies to the claims, the rejection is respectfully traversed.

As discussed above, amended independent claims 1 and 32 are patentable over Craft and Pinkerton as the aforementioned references fail to teach or suggest at least limitations (i)-(iv) of amended independent claim 1 recited above. Moreover, Tam does not teach or suggest that which Craft and Pinkerton lack.

Specifically, Tam is directed to a method for measuring and regulating the frequency of packets sent without having received an acknowledgement between sending and receiving computers over a network. *See Tam, Abstract and page 7 lines 19-31.* In particular, Tam does not teach or suggest a way of sharing connection state information between a software network protocol stack residing in the operating system of a computer system and a hardware network protocol stack implemented in a TOE-enabled network interface card associated with the computer system, rather, Tam is concerned with problems of congestion in network traffic.

In view of the above, amended independent claims 1 and 32 are patentable over Craft and Pinkerton in further view of Tam. Dependent claims 26-26 and 53-54 are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

New Claims

New claims 57-58 have been added by this reply. Applicants assert that none of the cited references, whether considered separately or in combination, teach or suggest the limitations recited in new claims 57 and 58. Accordingly, favorable action in the form of a Notice of Allowability is respectfully requested for the new claims.

Conclusion

Applicants believe this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 33227/217001).

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Respectfully submitted,

By ____/Robert P. Lord/
Robert P. Lord
Registration No.: 46,479
OSHA · LIANG LLP
909 Fannin Street, Suite 3500
Houston, Texas 77010
(713) 228-8600
(713) 228-8778 (Fax)
Attorney for Applicants